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Department of Pharmaceutical Biotechnology,
School of Pharmacy,
Shahid Beheshti University of Medical Sciences

EDUCATION

Ph.D. Pasteur Institute of Iran, Pharmaceutical Biotechnology December 2012

Dissertation: "Studies on the Effect of HCV Capsid Protein Expression on Transcriptional Levels of *IRF-1*, *ISG20* and *ISG56* Genes in Huh-7 Cell Line in the Presence or Absence of Interferon- α "

Supervisors: Dr. Farzin Roohvand, Dr. Mohammad Hossein Ghahremani

Pharm.D. Shahid Beheshti University of Medical Sciences, Pharmacy December 2005

Dissertation: "Design and synthesis of new rofecoxib derivatives as COX-2 selective inhibitors"

Supervisors: Dr. Afshin Zarqi, Dr. S. A. Tabatabaee

HONORS AND AWARDS

- The first in Ph.D. entrance examination 2006
- Top student introduced by Faculty of Pharmacy, Shahid Beheshti University of Medical Science 2000

TEACHING EXPERIENCE

Shahid Beheshti University of Medical Science February 2013 to present
Assistant, Professor, Pharmaceutical Biotechnology Department

Pharm.D. courses covering the following topics

- Pharmaceutical biotechnology 2010-present
- Biological products 2012-present
- Biochemistry 2014-2015
- Medicinal microbiology 2014-2015

Ph.D. courses covering the following topics

- Cellular and molecular biology 2015-present
- Genetic engineering 2015-present
- Biotechnological methods 2015-present
- Nanobiotechnology and biomaterials 2015-present
- Genetic engineering and fermentation 2015-present

STUDENTS SUPERVISED/ ADVISED

Ph.D. Students supervised/ advised

- Ahmadzadeh, M. “Expression of a fusion protein containing scFv against HER2 linked to IP-10 and *in vitro* evaluation of its biological activity”, 2015 Submitted (advisor)
- Gorji, G. “*Rab5a* gene silencing effect on metastasis of human hepatocellular carcinoma cell line via exosome secretion”, 2016 Submitted (supervisor)
- Behravan, A. “Metabolic engineering of *Escherichia coli* based on systems biology for the evaluation of its effect on anti EpCAM scFv expression”, 2016 Submitted (supervisor)
- Darbssizadeh, B. “Preparation of coaxially electrospun PEO/PCL nanofibers for local delivery of Doxorubicin” 2016 Submitted (advisor)
- Kardani, K. “Design and immunological assay of long peptides-based vaccines inducing T-cells against conserved regions of HIV-1 in BALB/c mice model”, 2018 Submitted (supervisor)
- Sharif, E. “Construction of recombinant OMV carrying neoepitopes of CT-26 cell line and its evaluation in murine colon carcinoma model”, 2018 Submitted (advisor)
- Ebrahimi, V. “Reconstruction of the *E. coli* K-12 RV04 context-specific metabolic network model and effect of strain engineering based on the reconstructed model predictions on acetate accumulation”, 2020 Submitted (supervisor)

Pharm.D. Students supervised/ advised

- Karimi, Z. “Selection of stable reference genes for quantitative evaluation of gene expression in nanosilver treated MCF-7 cells using the GeNorm and NormFinder algorithm”, 2014 Submitted (supervisor)
- Pourani, Z. “Reference gene evaluation for nanosilver cytotoxicity analysis using quantitative real-time PCR in HepG₂ cell line”, 2014 Submitted (supervisor)
- Mohammadi, A. “Expression and purification of single chain variable fragment of antibody against EpEX in *Escherichia coli*”, 2016 Submitted (supervisor)

- Gholizad, F. “Construction of recombinant *Pichia pastoris* expressing single-chain antibody fragment against EpEX”, 2017 Submitted (supervisor)
- Tabrizi, N. “Identification of stable exomiRs as endogenous reference genes in two breast cancer cell lines using the GeNorm and NormFinder algorithms”, 2018 Submitted (supervisor)
- Basafa, M. “Effect of *arcA* and *pka* genes knockout on the expression of anti- EpEX monoclonal antibody fragment”, 2018 Submitted (supervisor)
- Javadian, F. “Comparison of anti-EpEX Scfv solubility between three *Escherichia coli* expression hosts”, 2019 Submitted (supervisor)
- Aghamollaei, P. “Effect of temperature and inducer concentration on the expression of anti-EpEX Single Chain Fragment Variable in *Escherichia coli* SHuffle strain”, 2019 Submitted (supervisor)
- Mowla, M. “Investigating the possibility of increasing the electroporation efficiency in nucleic acid delivery to Huh-7 cells by a chemical penetration enhancer” 2019 Submitted (supervisor)
- Mansourian, M. “Cloning and expression of extracellular domain of Myelin Oligodendrocyte Glycoprotein (MOG) in *Escherichia coli*”, 2020 Submitted (supervisor)
- Seddighi, Z. “Effect of genetic manipulation of *Escherichia coli* on acetate overflow”, 2020 Submitted (supervisor)
- Keshavarz, M. “Optimization of induction conditions for expression of single-chain fragment variable antibody against HER2 receptor in endotoxin-free *Escherichia coli* strain” 2020 Submitted (advisor)
- Mobasheri, T. “Evaluating the effect of ethanol stress on the expression of scFv against HER2 protein in *Escherichia coli*” 2020 Submitted (advisor)
- Soltani nasab, S. “Evaluating the efficacy of purification process using immobilized metal affinity chromatography (IMAC) on the separation of host cell protein (HCP) from the recombinant anti-HER2 scFv in *Escherichia coli* 2020 Submitted (advisor)
- Esmian, M. “Evaluating the efficacy of organic solvent-based solubilization process in recovery of soluble anti-HER2 scFv from inclusion body” 2020 Submitted (advisor)
- Radmard, M. “Expression of a fusion protein comprising of thioredoxin and extracellular domain of Myelin Oligodendrocyte Glycoprotein in *Escherichia coli*”, 2021 Submitted (supervisor)
- Fesharaki, A. “Synthesis of citrate gold nanoparticles coated by chitosan polymer containing triptorelin acetate and in vitro evaluation of its anticancer effect on breast cancer cell line” 2021 Submitted (advisor)
- Construction of hyaluronic acid coated gold nanoparticles containing triptorelin acetate and in vitro evaluation of its anticancer effect on breast cancer cell line” 2021 Submitted (advisor)

Masters Students supervised/ advised

- Rasooli, F. “Expression of the epithelial cell adhesion molecule extracellular domain as a thioredoxin fusion protein in *Escherichia coli*”, 2015 Submitted (supervisor)
- Najafi, R. “Expression of single chain variable fragment against epithelial cell adhesion molecule extracellular domain in *Escherichia coli*”, 2015 Submitted (supervisor)
- Zamani, M. “Expression of the epithelial cell adhesion molecule extracellular domain in *Pichia pastoris*”, 2015 Submitted (supervisor)
- Heidari, M. “Investigation of pathogenicity islands (2-4), (9-10) in different serotypes of *salmonella*”, 2013 Graduated (advisor)

PUBLICATIONS

Books

- **Hashemi, A.**, Jahanbakhsh, F., Bokharaee, F., Salehi, M., Sadeghi, F., Shandiz, A. Hepatitis C. (two book chapters)
- Gorji, G., **Hashemi, A.** The Emerging Role of Exosomes as Cancer Theranostics. (one book chapter)
- Ebrahimi, V, **Hashemi, A.** Precise Sequence-Specific Antimicrobials Based on CRISPR: Toward Prevailing Over Bacterial Antibiotic Resistance. (one book chapter)

Journal Publications

- Behravan, A., **Hashemi, A.** Marashi, S. A. A Constraint-based modeling approach to reach an improved chemically defined minimal medium for recombinant antiEpEX-scFv production by *Escherichia coli*. *Biochemical Engineering Journal*, 2022.
- Behravan, A., **Hashemi, A.** Statistical optimization of culture conditions for expression of recombinant humanized anti-EpCAM single-chain antibody using response surface methodology. *Research in pharmaceutical sciences*. 2021.
- Gorji-bahri, G., Moradtabrizi, N., Vakhshiteh, F., **Hashemi, A.** Validation of common reference genes stability in exosomal mRNA-isolated from liver and breast cancer cell lines. *Cell Biology International*. 2021.
- Javadian, F., Basafa, M., Behravan, A., **Hashemi, A.** Solubility assessment of single-chain antibody fragment against epithelial cell adhesion molecule extracellular domain in four *Escherichia coli* strains. *Journal of Genetic Engineering and Biotechnology*. 2021.

- Behravan, A., **Hashemi, A.** RSM-based model to predict optimum fermentation conditions for soluble expression of monoclonal antibody fragment in SHuffle™ T7 *E. coli*. *Iranian Journal of Pharmaceutical Research*. 2021.
- Mowla, M., **Hashemi, A.** Functional roles of exosomal miRNAs in multi-drug resistance in cancer chemotherapeutics. *Experimental and Molecular Pathology*. 2021.
- Gorji-bahri, G., Moghimi, HR., **Hashemi, A.** RAB5A is associated with genes involved in exosome secretion: Integration of bioinformatics analysis and experimental validation. *Journal of cellular biochemistry*. 2021.
- **Hashemi, A.**, Bigdeli, R., Shahnazari, M., Oruji, F., Fattahi, S., Panahnejad, E., Ghadri, A., Movahedi-Asl, E., Mahdavi-Ourtakand, M., Asgary, V., Baghbani-Arani, F. Evaluation of inflammasome activation in peripheral blood mononuclear cells of hemodialysis treated patients with glomerulonephritis. *Iranian Journal of Pharmaceutical Research*. 2021.
- Gorji-Bahri, G., Moghimi, HR., **Hashemi, A.** RAB5A effect on metastasis of hepatocellular carcinoma cell line via altering the pro-invasive content of exosomes. *Experimental and Molecular Pathology*. 2021.
- Darbasizadeh, B., Mortazavi, S. A., Kobarfard, F., Jaafari, M. R., **Hashemi, A.**, Farhadnejad, H., Feyzi-barnaji, B. Electrospun Doxorubicin-loaded PEO/PCL core/sheath nanofibers for chemopreventive action against breast cancer cells. *Journal of Drug Delivery Science and Technology*. 2021.
- Gorji-Bahri, G., Moradtabrizi, N., **Hashemi, A.** Uncovering the stability status of the reputed reference genes in breast and hepatic cancer cell lines. *Plos one*. 2021.
- Ebrahimi, V, **Hashemi, A.** The Fabulous Impact of CRISPR Method in Sickle Cell Disease Treatment. *Trends in Peptide and Protein Sciences* 2021.
- Baghbani-Arani, F., Asgary, V., **Hashemi, A.** Cell-free extracts of *Lactobacillus acidophilus* and *Lactobacillus delbrueckii* display antiproliferative and antioxidant activities against HT-29 cell line. *Nutrition and cancer*. 2020.
- Kardani, K., Bolhassani, A., Agi, E., **Hashemi, A.** B1 protein: a novel cell penetrating protein for *in vitro* and *in vivo* delivery of HIV-1 multi-epitope DNA constructs. *Biotechnology letters*. 2020.
- **Hashemi, A.**, Gorji-Bahri, G. MicroRNA: Promising Roles in Cancer Therapy. *Current pharmaceutical biotechnology*. 2020.
- **Hashemi, A.**, Baghbani-arani, F., Larijani, MS. Genetic Polymorphisms of Three DNA-Repair Genes (PRKDC, XPD, XRCC1) are Related to Colorectal Cancer Susceptibility. *Cytology and Genetics*. 2020.
- **Hashemi, A.** CRISPR–Cas9/CRISPRi tools for cell factory construction in *E. coli*. *World Journal of Microbiology and Biotechnology*. 2020.
- V Ebrahimi, V., **Hashemi, A.** Challenges of *in vitro* genome editing with CRISPR/Cas9 and possible solutions: A review. *Gene*. 2020.

- Kardani, K., **Hashemi, A.**, Bolhassani, A. Comparative analysis of two HIV-1 multiepitope polypeptides for stimulation of immune responses in BALB/c mice. *Molecular immunology*. 2020.
- Soular, RN., Basafa, M., Rajabibazl, M., **Hashemi A.** Effective strategies to overcome the insolubility of recombinant ScFv antibody against EpCAM extracellular domain in *E. coli*. *International Journal of Peptide Research and Therapeutics*. 2020.
- Baghbani-Arani, F., Asgary, V., Bigdeli, R., Najafi-Far, R., **Hashemi, A.** Improvement of antiproliferative activity of recombinant truncated form of *Pseudomonas aeruginosa* exotoxin (PE38) by vitamin E in MCF-7 cells. *Journal of Reports in Pharmaceutical Sciences*. 2020.
- Baghbani-Arani, F., **Hashemi, A.**, Asgary, V., Shojaei, A., Dibaifar, S., Rajabe, M. Cell free extract of *Lactobacillus acidophilus* enhancing oxaliplatin antiproliferative effects in HT-29 cell line. *Research Journal of Biotechnology*. 2020.
- Mohammadi Vadoud, S A., **Hashemi, A.**, keramati, M., Rasouli, F. Effects of Cultivation Conditions on the Expression Level of Recombinant scFv Antibody against EpEX in *Escherichia coli*. *Trends in Peptide and Protein Sciences*. 2019.
- Kardani, K., **Hashemi A.**, Bolhassani A. Comparison of HIV-1 Vif and Vpu accessory proteins for delivery of polyepitope constructs harboring Nef, Gp160 and P24 using various cell penetrating peptides. *PloS one*. 2019.
- Mohammadgholizad, F., **Hashemi, A.** Construction of recombinant *Pichia pastoris* expressing single-chain antibody fragment against extracellular domain of EpCAM. *Koomesh*. 2019.
- Zamani, M., **Hashemi, A.**, Zarei, N., Jahandar, H. Construction of recombinant yeast expressing EpEX as a suitable candidate in cancer diagnosis and therapy. *Koomesh*. 2019.
- Rasouli, F., **Hashemi, A.** Efficient expression of EpEX in the cytoplasm of *Escherichia coli* using thioredoxin fusion protein. *Research in pharmaceutical sciences*. 2019.
- Gorji-Bahri, G., **Hashemi, A.**, Moghimi, HR. ExomiRs: A Novel Strategy in Cancer Diagnosis and Therapy. *Current gene therapy*. 2018.
- **Hashemi, A.** CRISPR-cas System as a Genome Engineering Platform: Applications in Biomedicine and Biotechnology. *Current gene therapy*. 2018.
- Karimi, Z., **Hashemi, A.** Validation of Reference Genes for Silver Nanotoxicity Analysis in MCF-7 Cell Line. *Journal of Cluster Science*, 2018.
- **Hashemi, A.**, Baghbani-arani, F., Ahmadiyan, S., Ghavami-Nejad, S. Multiple-locus variable-number tandem-repeat analysis in *Salmonella* isolates as an effective molecular subtyping method. *Microbial pathogenesis*, 2017.

- Pourani, Z., **Hashemi, A.** Stability assessment of reference genes for reliable analysis of silver nanoparticles cytotoxicity in HepG2 cell line. *Journal of Cluster Science*, 2017.
- **Hashemi, A.**, Baghbani-arani, F. The effective differentiation of Salmonella isolates using four PCR-based typing methods. *Journal of Applied Microbiology*, 2015.
- Mohit, E., **Hashemi, A.**, Allahyari, M. Breast cancer immunotherapy: monoclonal antibodies and peptide-based vaccines. *Expert Review of Clinical Immunology*, 2014 (7).
- **Hashemi, A.**, Roohvand, F., Ghahremani, M-H. Selection of valid reference genes for expression studies of hepatic cell lines under IFN- α treatment. *Biochemical and Biophysical Research Communications*, 2012 (426).
- **Hashemi, A.**, Roohvand, F., Ghahremani, M-H. Aghasadeghi, M., Vahhab poor, R., Motevali, F., Memarnejadian, A. Optimization of Transfection Methods for Huh-7 and Vero Cells: A Comparative Study. *Cytology and Genetics*, 2012 (46).
- **Hashemi, A.**, Roohvand, F., Ghahremani, M-H. Edalat, R. Evaluation of the effects of interferon on stability of control genes in Huh-7 and HepG₂ cells. *MJMS*, 2012 (1).
- Baghbani-arani, F., Tajbakhsh, M., **Hashemi, A.**, Rajai, B., Siadat, SD., Aghasadeghi, MM., Sadat, SM. Molecular typing of *Salmonella* paratyphi B and *Salmonella* paratyphi C isolated from clinical samples in Iran. *JFUMS*, 2012 (5).
- Noorbazargan, H., **Hashemi, A.**, Motevalli, F., Aghasadeghi, M.R., Memarnejadian, A., Asmar, M., Roohvand, F. Confocal-microscopic study on HCV core+1 protein expression. *Journal of Microbial World*, 2009 (2).

Conference Papers

- **Hashemi, A.** CRISPR/Cas9 technology: promising roles in gene therapy. *5th international congress on pharmacy updates*. 2020, Tehran, IRAN (Oral presentation).
- Mansoorian, M., **Hashemi, A.** Efficient expression of extracellular domain of MOG in Escherichia coli. *5th international congress on pharmacy updates*. 2022, Tehran, IRAN (Poster presentation).
- Kardani, K., Bolhassani, A., Agi, E., **Hashemi, A.** Evaluation of a novel cell penetrating protein for *in vitro* DNA delivery. *16th national congress of biochemistry & 7th international congress of biochemistry & molecular biology*. 2020, Tehran, IRAN (Oral presentation).
- Moradtabrizi, N., Gorji-Bahri, G., Vakhshiteh, F., **Hashemi, A.** Identification of stable reference genes in exosomes derived from breast and hepatic cancer cell lines. *16th national congress of biochemistry & 7th international congress of biochemistry & molecular biology*. 2020, Tehran, IRAN (Poster presentation).

- Basafa, M., Behravan, A., Javadian, F., **Hashemi, A.**, Comparative analysis of host effect on solubility of antiEpCAM single-chain antibody fragment. *16th national congress of biochemistry & 7th international congress of biochemistry & molecular biology*. 2020, Tehran, IRAN (Poster presentation).
- Behravan, A., **Hashemi, A.**, Basafa, M. Optimizing the recombinant production of the antibody fragment against EpCAM in a chemically defined minimal medium using Response Surface Methodology. *16th national congress of biochemistry & 7th international congress of biochemistry & molecular biology*. 2020, Tehran, IRAN (Poster presentation).
- Aghamollae, P., Behravan, A., Basafa, M., **Hashemi, A.** response surface methodology based optimized expression of anti-EpEX scFv in *Escherichia coli* SHuffle® T7. *3rd international congress on pharmacy updates*. 2020, Tehran, IRAN (Poster presentation).
- **Hashemi, A.** Systems metabolic engineering strategies for developing cell factories. *3rd international congress on pharmacy updates*. 2020, Tehran, IRAN (Oral presentation).
- Kardani, K., **Hashemi, A.**, Bolhassani, A. B- and T-cell epitope prediction of HIV-1 NEF and VPU proteins. *26th International Student Congress Of (bio) Medical Sciences*. 2019, Groningen, Netherlands (Oral presentation).
- Kardani, K., Agi, E., **Hashemi, A.**, Bolhassani, A. B1 cell penetrating peptide expression in a prokaryotic host. *3rd international and 11th national congress of Islamic republic of IRAN*. 2019, Tehran, IRAN (Oral presentation).
- Kardani, K., **Hashemi, A.**, Bolhassani, A. T-cell epitope predictions of HIV-1 VPU protein. *The 3rd International and 7th National Congress of HIV/AIDS*. 2018, Tehran, IRAN (Poster presentation).
- Gholizad, F., Rasooli, F., **Hashemi, A.** Construction of recombinant vector harboring gene encoding scFv against EpEX and *Pichia pastoris* transformant isolation. *Peer-review multidisciplinary pharmacy scientific journal*. 2018, Tehran, Iran (Poster presentation).
- Barabadi, H., **Hashemi, A.** Application of CRISPR-Cas9 genome editing system in biomedical studies: recent progress and future perspectives. *Peer-review multidisciplinary pharmacy scientific journal*. 2018, Tehran, Iran (Poster presentation).
- Mohammadi, SA., **Hashemi, A.**, keramati, M. Expression and purification of Recombinant scFv antibodies against EpEX in *Escherichia coli* Rosetta™(DE3) Rosetta-Gami™, Origami™ and Shuffle. *14th International Congress of Immunology and Allergy*. 2018, Tehran, Iran (Poster presentation).
- Rasooli, F., **Hashemi, A.**, keramati, M. *Escherichia coli* expression and process optimization of EpEX antigen as a suitable target for therapeutic vaccination. *18th International Congress of microbiology*. 2017, Tehran, Iran (Poster presentation).

- Mohammadi, SA., **Hashemi, A.**, keramati, M. Expression and purification of Recombinant scFv antibodies against EpEX in *Escherichia coli* Rosetta™(DE3). *2rd international and 10th national biotechnology congress of Islamic republic of IRAN*. 2017, Tehran, Iran (Poster presentation).
- Pourani, Z., **Hashemi, A.** Selection of reliable reference genes for RT-qPCR analysis in HepG2 cells treated with silver nanoparticles. *2rd international and 10th national biotechnology congress of Islamic republic of IRAN*. 2017, Tehran, Iran (Poster presentation).
- Najafi, R., Hashemi, A., Keramati, M., Rajabibazl, M. Overexpression optimization of an anti-EpCAM extracellular domain single chain variable fragment in *Escherichia coli*. *17th International Congress of microbiology Iran*, 2016. Tehran, Iran (Poster presentation).
- Rasooli, F., **Hashemi, A.**, Keramati, M., Rajabibazl, M. Expression of EpCAM extracellular domain as a candidate vaccine in colorectal cancer in *E.coli*. *17th International Congress of microbiology Iran*, 2016. Tehran, Iran (Poster presentation).
- Zamani, M., Zareie, N., **Hashemi, A.**, Rajabi-bazl, M. Cloning and expression of the recombinant EpEX in *Pichia Pastoris*. *17th International Congress of microbiology Iran*, 2016. Tehran, Iran (Poster presentation).
- Najafi, R., **Hashemi, A.**, Keramati, M. Construction, bacterial expression of a single chain antibody targeted to the human epithelial cell adhesion molecule extracellular domain. *13th International Congress of Immunology and Allergy of Iran*. Tehran, Iran (Poster presentation).
- Purani, Z., Karimi, Z., **Hashemi, A.** The Role of reactive oxygen species in cell cytotoxicity induced by nanoparticles. *14th Iranian pharmaceutical Sciences Congress (ipsc)*. Tehran, Iran (Poster presentation).
- Behravan, A., **Hashemi, A.** Next Generation of antibody: Non Immunoglobulin protein Scaffolds. *14th Iranian pharmaceutical Sciences Congress (ipsc)*. Tehran, Iran (Poster presentation).
- Behravan, A., **Hashemi, A.** DARPins: Novel binding proteins with desired specificity. *The 19th iranian pharmacy students seminar*, October 2014, Shiraz, Iran (Poster presentation).
- Karimi, Z., Purani, Z., **Hashemi, A.** Physicochemical properties influencing cellular uptake, intracellular trafficking and biological effects of nanomaterials. *The 18th Iranian pharmacy students seminar*, October 2014, Tabriz, Iran (Poster presentation).
- Ahmadzadeh, M., **Hashemi, A.** Validation of Reference Genes for Normalization Improvement in Real Time PCR. *National students congress on pharmaceutical sciences*, October 2014, Mazandaran, Iran (Poster presentation).
- Baghbani–Arani, F., **Hashemi, A.** Evaluation of repetitive element sequence analysis for typing and phylogenetic analysis of Iranian *Salmonella* species. *The 1st*

- International and the 13th Iranian genetics Congress*, May 2014, Tehran, Iran. (Poster presentation).
- Baghbani–Arani, F., Bagheri Najafabad, M. Heydari, M., Sadat, S.M., **Hashemi, A.**, Kheder Zadeh, S., Presence of *Salmonella* pathogenicity island 1 and 2 genes in *Salmonella enterica* serovars isolated from Iranian patients. *The 1st International and the 13th Iranian genetics Congress*, May 2014, Tehran, Iran. (Oral presentation).
 - Heydari, M., Baghbani–Arani, F., **Hashemi, A.**, Kheder Zadeh, S., Bagheri Najafabad, M. Distribution of *Salmonella* pathogenicity island SPI-4 among different serotypes of *Salmonella*. *The 4th International Veterinary Poultry Congress*, February 2014, Tehran, Iran (Poster presentation).
 - **Hashemi, A.**, Motevali, F., Lolaie, M., Ghahremani, M.H., Roohvand, F. Studies on the effect of HCV Core Protein Expression on Transcriptional Levels of selected interferon-stimulated genes in Huh-7 Cell Lines. *The 5th International Hepatitis Congress*, 2013, Tehran, Iran (Oral presentation).
 - **Hashemi, A.**, Motevali, F., Lolaie, M., Vahhab poor, R., Houshmand, A., Roohvand, F. Transcriptional activation of interferon stimulated genes (*ISGs*) by HCV F protein (ARFP). *The 19th International Symposium on Hepatitis C Virus and Related Viruses, 2012*, Venice, Italy (Poster presentation).
 - Lolaie, M., Roohvand, F., **Hashemi, A.**, Motevali, F. Activation of *MxA* gene by the hepatitis C virus F protein. *The 13th Iranian & The Second International Congress of Microbiology*, July 2012, Ardabil, Iran (Poster presentation).
 - **Hashemi, A.**, Roohvand, F., Ghahremani, M-H. Does IFN- α de-regulate common reference genes in hepatic cell lines? *The 12th Iranian genetics Congress*, May 2012, Tehran, Iran. (Poster presentation).
 - **Hashemi, A.**, Baghbani Arani, F., Tajbakhsh, M. Molecular characterization of *salmonella* isolates by BOXAIR-PCR analysis. *The 12th Iranian genetics Congress, May 2012*, Tehran, Iran. (Poster presentation).
 - Lolaie, M., **Hashemi, A.**, Motevali, F., Vahhabpour, R., Houshmand, A., Roohvand, F. Hepatitis C virus F protein triggers *PKA* activation. *6th Iranian Congress of Virology*. 2012, Tehran, Iran. (Poster presentation).
 - Lolaie, M., **Hashemi, A.**, Motevali, F., Roohvand, F. Studies on potential interfering effect of HCV Core+1 protein on Interferon-Based transcriptional regulations. *The 11th International Congress of Immunology and Allergy*, April 2012, Tehran, Iran. (Oral presentation).
 - **Hashemi, A.**, Ghahremani, M-H., Aghasadeghi, M., Vahhab poor, R., Motevali, F., Memarnejadian, A., Noorbazargan, H., Roohvand, F. Optimization and Comparison of chemical-based gene delivery methods to electroporation for use in Huh-7 and Vero cells. *The 7th national biotechnology Congress of I.R.Iran*, September 2011, Tehran, Iran. (Poster presentation).

- **Hashemi, A.**, Memarnejadian, A., Motevalli, F., Edalat, R., Vahabpour, R., Noorbazargan, H., Roohvand, F., Ghahremani, M.H. Differential expression of interferon regulatory factor 1 by native and truncated HCV core proteins. *The 10th International Congress of Immunology and Allergy of Iran*, May 2010, Tehran, Iran (Poster presentation).
- **Hashemi, A.**, Motevalli, F., Memarnejadian, A., Aghasadeghi, M.R., Noorbazargan, M.H., Ghahramani, M.H., Roohvand, F. Expression of domains 1 and 2 of HCV core protein in Huh7 eukaryotic cell line. *The 11th Iranian Congress of Genetics*, May 2010, Tehran, Iran (Poster presentation).
- Noorbazargan, H., **Hashemi, A.**, Motevalli, F., Memarnejadian, A., Aghasadeghi, M.R., Asmar, M., Roohvand, F. Expression of HCV ARFP/DF protein in hepatic cells. *The 11th Iranian Congress of Genetics*, May 2010, Tehran, Iran (Poster presentation).
- Noorbazargan, H., **Hashemi, A.**, Motevalli, F., Memarnejadian, A., Aghasadeghi, M.R., Roohvand, F. Expression of truncated HCV core+1 protein in hepatic mammalian cells. *The 11th Iranian Microbiology Congress and 1st East Mediterranean Microbiology Congress*, May 2010, Langrood, Iran (Poster presentation).
- Roohvand, F., Motevalli, F., Ghahramani, M.H., Noorbazargan, H., Memarnejadian, **A.**, **Hashemi, A.**, Aghasadeghi, M.R. Expression studies of native and truncated HCV core proteins in mammalian cells. *The 11th Iranian Microbiology Congress and 1st East Mediterranean Microbiology Congress*, May 2010, Langrood, Iran (Poster presentation).
- Noorbazargan, H., **Hashemi, A.**, Aghasadeghi, M.R., Motevalli, F., Sadat, S.M., Memarnejadian, A., Asmar, M., Roohvand, F. Construction of vector expressing ARFP/F/Core+1 protein in eukaryotic cells. *Regional Meeting on Recent Findings of Molecular Microbiology*, 2009, Lahijan, Iran (Oral presentation).

RESEARCH PROJECTS

- Investigation of the effect of urea on electroporation efficiency in nucleic acid transfer to HEK-293 cell line. Approved by Shahid Beheshti University of Medical Sciences, 2022.
- Culture condition optimization for expression of scfv derived from 4D5MOC-B humanized mAb in chemically defined minimal medium by statistical approach. Approved by Shahid Beheshti University of Medical Sciences, 2021.
- Development of an artificial neural network model to optimize the anti-EpEX scFv production. Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2021.

- A metabolic network model based approach for engineering of *Escherichia coli* to improve single chain antibody fragment production. Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2021.
- B1 protein: a novel cell penetrating protein for *in vitro* and *in vivo* delivery of HIV-1 multi-epitope DNA constructs. Approved by Shahid Beheshti University of Medical Sciences, 2020.
- Comparison of HIV-1 Vif and Vpu accessory proteins for delivery of polyepitope constructs harboring Nef, Gp160 and P24 using various cell penetrating peptides. Approved by Shahid Beheshti University of Medical Sciences, 2020.
- A potential role of Rab5a in exosome secretion pathway: validation following bioinformatics analysis. Approved by Shahid Beheshti University of Medical Sciences, 2020.
- Design and immunological evaluation of peptide constructs harboring immunodominant epitopes of Nef, Vif, Vpu, Gp160, and P24 protein in BALB/c mice model. Approved by Shahid Beheshti University of Medical Sciences, 2020.
- Solubility optimization of recombinant single-chain antibody fragment against extracellular domain of epithelial cells adhesion molecule in two *E.coli* strains using response surface methodology. Approved by Shahid Beheshti University of Medical Sciences, 2020.
- Effect of *arcA* and *pka* genes knockout on the expression of a single-chain antibody fragment against extracellular domain of EpCAM. Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2020.
- Comparison of the solubility of a single-chain antibody fragment against EpCAM between three *Escherichia coli* hosts. Approved by protein technology research center, Shahid Beheshti University of Medical Sciences, 2020.
- Systems biology approach in the development of chemically-defined minimal media for optimization of anti-EpEX scFv in *Escherichia coli*. Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2019.
- *In vitro* study of antioxidant and cytotoxic effects of Lactobacillus probiotic bacterial cell extracts against HT-29 Cell Line. Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2019.
- Validation of reference exomiRs for RT-qPCR Analysis in two breast cancer cell lines. Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2018.
- Identification of stable exosomal miRNAs as endogenous reference genes in HCC cell lines. Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2018.
- Optimization of antiEpEX-scFv Expression in SHuffle expression host. Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2018.

- *Rab5a* gene silencing effect on metastasis of human hepatocellular carcinoma cell line via exosome secretion, INSF, 2017.
- Expression and purification of scfv against EpEX in *Escherichia coli*, Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2017.
- Construction of recombinant vector harboring gene encoding scfv against EpEX and *Pichia pastoris* transformant isolation, Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2017.
- Cloning and expression of single chain variable fragment against epithelial cell adhesion molecule extracellular domain in *Escherichia coli*, Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2016.
- Expression of the epithelial cell adhesion molecule extracellular domain in *Pichia pastoris* and purification of recombinant protein, Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2016.
- Construction of recombinant vector harboring gene encoding extracellular part of epithelial cell adhesion molecule and *Pichia pastoris* transformant isolation, Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2016.
- Expression of the epithelial cell adhesion molecule extracellular domain in *Escherichia coli*, Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2015.
- Construction of recombinant vector harboring gene encoding extracellular part of epithelial cell adhesion molecule, Approved by protein technology research center, Shahid Beheshti University of Medical Sciences, 2015.
- Selection of reliable reference genes in hepatic cell line for silver nanotoxicity analysis, Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2015.
- Effects of silver nanoparticles on the expression of selected reference genes in breast cancer cell line, Approved by Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2014.

PROFESSIONAL TRAINING

Workshops

- Cytation 3 cell Imaging Multi-Mode Reader, Biochemistry Department of Tarbiat Modares University, Tehran- Iran, 2014
- Flowcytometry, Royan Institue, Tehran- Iran, 2013
- SPSS programm, Pasteur Institute of Iran, Tehran- Iran, 2011
- Real Time PCR, Pasteur Institute of Iran, Tehran- Iran, 2010
- DNASIS MAX, Pasteur Institute of Iran, Tehran- Iran, 2010

PROFESSIONAL AFFILIATIONS

- School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2014- 2016
- School of Pharmacy, Shahid Beheshti University of Medical Sciences, 2013-Present

MEMBERSHIPS

- Iranian Society of Pharmacists, 2002-Present
- Medical Council I.R.IRAN, 2002-Present

LANGUAGES

Persian: Native Language

English: Intermediate Listener and Speaker, Advanced Reading and Writing

ACTIVE RESEARCH AREA

- Recombinant protein expression in prokaryotic and eukaryotic host cells
- Therapeutic recombinant monoclonal antibodies: preparation and engineering
- Metabolic engineering
- Systems biology
- Engineering exosomes as biological nanoplatfoms for drug delivery
- Gene expression analysis using Real Time PCR
- Targeted gene delivery to cancer cells
- Bioinformatics